

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>			1. CONTRACT ID CODE		PAGE OF PAGES 1   40	
2. AMENDMENT/MODIFICATION NO. <b>0003</b>		3. EFFECTIVE DATE <b>20-Mar-2003</b>		4. REQUISITION/PURCHASE REQ. NO. W62N6M-2205-2422		5. PROJECT NO.(If applicable)
6. ISSUED BY DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, SACRAMENTO 1325 J STREET SACRAMENTO CA 95814-2922		CODE <b>DACW05</b>		7. ADMINISTERED BY (If other than item 6) <b>See Item 6</b>		CODE
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				X 9A. AMENDMENT OF SOLICITATION NO. <b>DACW05-03-B-0001</b>		
				X 9B. DATED (SEE ITEM 11) <b>13-Feb-2003</b>		
				10A. MOD. OF CONTRACT/ORDER NO.		
				10B. DATED (SEE ITEM 13)		
CODE		FACILITY CODE				
<b>11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS</b>						
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.						
12. ACCOUNTING AND APPROPRIATION DATA (If required)						
<b>13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS.</b> <b>IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.</b>						
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.						
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).						
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:						
D. OTHER (Specify type of modification and authority)						
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.						
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) 1) Chemical Analysis, Annual Lakes Water Quality Testing, U.S. Army Corps of Engineers, Sacramento District. The point of contact for this Amendment is Rachel Rosas at 916/557-7716.  2) This amendment is an administrative action only. Check the Sacramento District webpage, <a href="http://www.spk.usace.army.mil/cespk-ct/">http://www.spk.usace.army.mil/cespk-ct/</a> to see a revised copy of the Invitation-for-Bid package which incorporates all modifications thus far issued.  3) All potential offerors are required to completely fill out Blocks 15A, 15B, & 15C, and return one signed copy along with your proposal at time of bid opening.						
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.						
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
				TEL: EMAIL:		
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED
_____ (Signature of person authorized to sign)				BY _____ (Signature of Contracting Officer)		20-Mar-2003

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

**SUMMARY OF CHANGES**

SECTION A - SOLICITATION/CONTRACT FORM

The following have been added by full text:

SF33 CONTINUATION SHEET

**CONTINUATION OF STANDARD FORM 33  
BLOCKS 16 & 17:**

**PAGE 2 OF 3**

**(1) IF THE OFFEROR IS A JOINT VENTURE, EACH PARTICIPANT IN THE JOINT VENTURE MUST COMPLETE THE FOLLOWING:**

_____ Company Name	_____ Signature	_____ Title
_____ Company Name	_____ Signature	_____ Title
_____ Company Name	_____ Signature	_____ Title

**NOTE:** If a corporation is participating as a member of a Joint Venture, the certificate below must also be completed and signed.

**CORPORATION AUTHORIZATION TO PARTICIPATE IN JOINT VENTURE CERTIFICATE**

I, \_\_\_\_\_, certify that I am the Secretary of the corporation names

(name)

as a corporation named as a participant in a Joint Venture on this offer; that \_\_\_\_\_, who  
signed said offer on behalf of the corporation was then

(name)

\_\_\_\_\_ of said corporation, that the signature thereto is genuine; that said

(title)

contract was duly signed, sealed and attested for and in behalf of said corporation by authority of its  
governing body; and that the corporation is authorized to participate in the Joint Venture on this offer.

\_\_\_\_\_  
(Name of Corporation)

\_\_\_\_\_  
(Secretary)

CONTINUATION OF STANDARD FORM 33  
BLOCKS 16 & 17

PAGE 3 OF 3

**(2) IF THE OFFEROR IS A PARTNERSHIP, LIST FULL NAME OF ALL PARTNERS BELOW. SIGNATURES BY ALL PARTNERS HERE SIGNIFY THAT THE INDIVIDUAL WHO SIGNED THE OFFER IN BLOCK HAS THE AUTHORITY TO BIND THE PARTNERSHIP.**

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Signature

**(3) IF THE OFFEROR IS A CORPORATION, THE OFFER SHALL BE SIGNED IN THE CORPORATE NAME FOLLOWED BY THE WORD "BY" AND THE SIGNATURE OF THE PERSON AUTHORIZED TO SIGN CONTINUATION OF STANDARD FORM 33 THE OFFER IN BLOCK. PROVIDE PROOF THAT THE PERSON SIGNING FOR THE CORPORATION HAS THE AUTHORITY TO BIND THE CORPORATION BELOW.**

#### CORPORATION AUTHORIZATION CERTIFICATE

I, \_\_\_\_\_, certify that I am the Secretary of the corporation named as  
(name)  
offeror; that \_\_\_\_\_, who signed said offer on behalf of the corporation was then  
(name)  
\_\_\_\_\_ of said corporation; that the signature thereto is genuine; that  
(title)  
said contract was duly signed, sealed and attested for and in behalf of said corporation by authority of its governing body.

\_\_\_\_\_  
(Name of Corporation)

\_\_\_\_\_  
(Secretary)

**(4) IF THE OFFEROR IS AN INDIVIDUAL DOING BUSINESS AS A FIRM, THE OFFER SHALL BE SIGNED BY THAT INDIVIDUAL IN BLOCK FOLLOWED BY THE WORDS "AN INDIVIDUAL DOING BUSINESS AS \_\_\_\_\_."  
(INSERT NAME OF FIRM).**

**(5) WHEN AN AGENT SIGNS THE OFFER, PROVIDE PROOF OF THE AGENT'S AUTHORITY TO BIND THE PRINCIPAL.**

#### SECTION B - SUPPLIES OR SERVICES AND PRICES

The following have been modified:

PRICING SCHEDULE

SECTION B  
SUPPLIES OR SERVICES AND PRICES

PRICING SCHEDULE

Contractor shall furnish all plant, labor, material, equipment, etc., necessary to perform all work in strict accordance with the terms and conditions set forth in the contract to include all attachments thereto.

Base Year

Period of performance begins at contract award until 30 September 2003. (Spring and Summer Sampling) **All Line Items will be priced to include EPA Level III Data Package and EDD (Electronic Deliverable Data)/ADR format as specified in the Statement of Work. (\*See Note 2)**

LINE ITEM NO.	DESCRIPTION	QTY	UNIT OF MEASURE	UNIT PRICE	TOTAL PRICE
0001	VOCs/8260 MTBE, DIPE, ETBE, TAME Ethanol	<b>100</b> 75	each	\$_____	\$_____
0002	Chemical Oxygen Demand (COD) by Method E410.1	32	each	\$_____	\$_____
0003	CLP Metals (Preparation & Analysis) by Method 6000/7000	75	each	\$_____	\$_____
0004	Mercury-Digestion & Analysis by Method 1631	75	each	\$_____	\$_____
0005	Total Organic Carbon (TOC) by Method 415.1	30	each	\$_____	\$_____
0006	Ammonia by Method 350.0	30	each	\$_____	\$_____
0007	Nitrate as Nitrogen by Method 352.1	50	each	\$_____	\$_____
0008	Kjeldahl Nitrogen by Method 351.1	50	each	\$_____	\$_____
0009	Dissolved Orthophosphate by Method 365.1	50	each	\$_____	\$_____
0010	Total Phosphorus by Method 365.1	50	each	\$_____	\$_____
0011	TDS/TSS/TS by Method 160.1, 160.2, & 160.3	64	each	\$_____	\$_____
0012	Total, Bicarbonate, Carbonate & Alkalinity	64	each	\$_____	\$_____
0013	Sulfate by Method 375.4	64	each	\$_____	\$_____
0014	Chloride by Method 325.3	64	each	\$_____	\$_____
<b>Total Estimated Price Base Year</b>					
<del>Subtotal Costs for FY03 Analytical Service (Line Items 0001-0014)</del>					\$_____

**\*\* All quantities above are estimated amounts. See Estimated Quantity paragraph**

DACW05-03-B-0001

**in Section F.** ~~Quantity is an estimated amount. See variation in quantity clause~~

Contractor shall furnish all plant, labor, material, equipment, etc., necessary to perform all work in strict accordance with the terms and conditions set forth in the contract to include all attachments thereto.

Option Year One

Period of performance begins 1 October 2003 until 30 September 2004. (Spring and Summer Sampling) **All Line Items will be priced to include EPA Level III Data Package and EDD (Electronic Deliverable Data)/ADR format as specified in the Statement of Work. (\*See Note 2)**

LINE ITEM NO.	DESCRIPTION	QTY	UNIT OF MEASURE	UNIT PRICE	TOTAL PRICE
1001	VOCs/8260 MTBE, DIPE, ETBE, TAME Ethanol	<b>100</b> 75	each	\$_____	\$_____
1002	Chemical Oxygen Demand (COD) by Method E410.1	32	each	\$_____	\$_____
1003	CLP Metals (Preparation & Analysis) by Method 6000/7000	75	each	\$_____	\$_____
1004	Mercury-Digestion & Analysis by Method 1631	75	each	\$_____	\$_____
1005	Total Organic Carbon (TOC) by Method 415.1	30	each	\$_____	\$_____
1006	Ammonia by Method 350.0	30	each	\$_____	\$_____
1007	Nitrate as Nitrogen by Method 352.1	50	each	\$_____	\$_____
1008	Kjeldahl Nitrogen by Method 351.1	50	each	\$_____	\$_____
1009	Dissolved Orthophosphate by Method 365.1	50	each	\$_____	\$_____
1010	Total Phosphorus by Method 365.1	50	each	\$_____	\$_____
1011	TDS/TSS/TS by Method 160.1, 160.2, & 160.3	64	each	\$_____	\$_____
1012	Total, Bicarbonate, Carbonate & Alkalinity	64	each	\$_____	\$_____
1013	Sulfate by Method 375.4	64	each	\$_____	\$_____
1014	Chloride by Method 325.3	64	each	\$_____	\$_____
Total Estimated Price Option Year One					
<del>Subtotal Costs for FY04 Analytical Service (Line Items 1001-014)</del>					\$_____

**\*\* All quantities above are estimated amounts. See Estimated Quantity paragraph in Section F. Quantity is an estimated amount. See variation in quantity clause**

Contractor shall furnish all plant, labor, material, equipment, etc., necessary to perform all work in strict accordance with the terms and conditions set forth in the contract to include all attachments thereto.

Option Year Two

Period of performance begins 1 October 2004 until 30 September 2005. (Spring and Summer Sampling) **All Line Items will be priced to include EPA Level III Data Package and EDD (Electronic Deliverable Data)/ADR format as specified in the Statement of Work. (\*See Note 2)**

LINE ITEM NO.	DESCRIPTION	QTY	UNIT OF MEASURE	UNIT PRICE	TOTAL PRICE
2001	VOCs/8260 MTBE, DIPE, ETBE, TAME Ethanol	<b>100</b> 75	each	\$_____	\$_____
2002	Chemical Oxygen Demand (COD) by Method E410.1	32	each	\$_____	\$_____
2003	CLP Metals (Preparation & Analysis) by Method 6000/7000	75	each	\$_____	\$_____
2004	Mercury-Digestion & Analysis by Method 1631	75	each	\$_____	\$_____
2005	Total Organic Carbon (TOC) by Method 415.1	30	each	\$_____	\$_____
2006	Ammonia by Method 350.0	30	each	\$_____	\$_____
2007	Nitrate as Nitrogen by Method 352.1	50	each	\$_____	\$_____
2008	Kjeldahl Nitrogen by Method 351.1	50	each	\$_____	\$_____
2009	Dissolved Orthophosphate by Method 365.1	50	each	\$_____	\$_____
2010	Total Phosphorus by Method 365.1	50	each	\$_____	\$_____
2011	TDS/TSS/TS by Method 160.1, 160.2, & 160.3	64	each	\$_____	\$_____
2012	Total, Bicarbonate, Carbonate & Alkalinity	64	each	\$_____	\$_____
2013	Sulfate by Method 375.4	64	each	\$_____	\$_____
2014	Chloride by Method 325.3	64	each	\$_____	\$_____
<b>Total Estimated Price Option Year Two</b>					
<del>Subtotal Costs for FY05 Analytical Service</del> (Line Items 2001-2014)					\$_____

**\*\* All quantities above are estimated amounts. See Estimated Quantity paragraph in Section F. Quantity is an estimated amount. See variation in quantity clause**

**Total Estimated Price, Base and Two Option Years** \$\_\_\_\_\_

INSTRUCTION TO BIDDERS:

1. Prices must be submitted on all individual items of this Pricing Schedule. Failure to do so may be cause for rejection of bids.
2. The Pricing Schedule provides a list of the chemical analyses. The contractor ~~laboratory~~ shall bid on unit price ~~cost~~ for each analysis. ~~The laboratory will be paid for the actual number of analysis performed.~~
3. All extensions of the unit prices shown will be subject to verification by the Government. In case of variation between the unit price and extension, the unit price will be considered to be the price.
4. The bidder shall distribute indirect costs (overhead, profit, bond, etc.) overall the items in the Pricing Schedule. The Government will review all submitted Pricing Schedules for any unbalancing of the items. Any submitted Pricing Schedule determined to be unbalanced may be considered non-responsive and cause the bidder to be ineligible for award.
5. Arithmetic Discrepancies. For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the pricing schedule as submitted by bidders:
  - a. Obviously misplaced decimal points will be corrected;
  - b. In case of discrepancy between unit price and extended price, apparent errors in extension of unit prices will be corrected.
  - c. Apparent errors in addition of extended pricing will be corrected.
  - d. Apparent errors in addition of lump sum and extended prices will be corrected.
6. For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.
7. Award will be made to one responsible, responsive bidder whose price is the lowest for the total of the base year and option years one and two. ~~to include the base and two option year pricing based on the Evaluation Criteria for Award. Bidders must submit prices on all items, for the base and two options years.~~

Notes:

1. **All Section B, Pricing Schedule, Line Items with quantities are estimated-quantity Line Items. The quantities are estimated amounts and are not guaranteed amounts. The contractor will only be paid for work actually performed. At no time will the contractor exceed the estimated quantity on any estimated quantity Line Item. The contractor will establish a tracking system of actual quantities against the contract's estimated quantities for each estimated quantity Line Item and will maintain the tracking system up to date throughout the life of the contract. When the actual quantity of any Line Item reaches 75% of the estimated quantity on any estimated quantity Line Item, the contractor will notify the Government's Contract Specialist and the Technical POC in writing by facsimile or email within two calendar days. Once the Government is notified that the actual quantity has reached 75% of the estimated quantity on any Line Item and if the Government determines that the estimated quantity needs to be increased , the contractor will receive an official modification to the contract action signed by the Contracting Officer increasing the quantity and the amount obligated on the contract BEFORE the contractor will proceed to work over the existing estimated quantity. The modification will set the new estimated quantity that the contractor may not exceed without another modification. Every invoice will be accompanied by a full accounting of each Line Item being billed, the actual quantity being billed and supporting documentation to support the actual quantities.**
2. **The Government will provide EDD/ARR format upon award of the contract.**
3. **Those labs not currently certified may request an application for certification. Provide in writing a written request to: U.S. Army Corps of Engineers, Sacramento District, Attn: CESPCK-ED-E (Tommy Waldrup), 1325 J Street, Sacramento, California 95814-2922. Along with the written request, provide two**

**copies each of the labs Quality Management Plan (QMP), current Method Detection Limits (MDL's), and Reporting Limits (RL) for all of the lab methods requiring certification.**

## SECTION C - DESCRIPTIONS AND SPECIFICATIONS

The following have been modified:

REVISED - - AMENDMENT 0002

**REVISED 12 MARCH 2003**

**STATEMENT OF WORK  
For  
CHEMICAL ANALYSIS  
Annual Lakes Water Quality**

**US ARMY CORPS OF ENGINEERS  
SACRAMENTO DISTRICT**

### **1. Introduction**

The contractor shall provide laboratory support services in accordance with this SOW for the analysis of water samples for organic and inorganic parameters to support water-monitoring activities at the twelve lakes supported by the Sacramento and San Francisco Districts, California.

### **2. Summary Description of Services to be Provided**

Black Butte Lake was formed in 1963 upon the completion of Black Butte Dam. Located on Stony Creek west of Orland, the lake is an inviting and accessible recreation area on the west side of the Sacramento Valley. When full, the lake has a surface area of 4,460 acres, is seven miles long and has a shoreline of 40 miles. The dam provides flood damage protection for local towns and agricultural lands.

Eastman Lake is nestled in the Sierra Nevada foothills surrounded by grasslands and blue oaks. At maximum capacity, the lake has 1,780 surface acres and holds 150,000 acre feet of water. The lake was created by the construction of Buchanan Dam on the Chowchilla River. The dam is an earth and rockfill structure 205 feet high and 1,800 feet in length. At 600' elevation, summers are warm and the winters mild, allowing for year-round recreation. Built by the US Army Corps of Engineers for flood control, irrigation and recreation, the lake is a popular destination for visitors of all ages.

Englebright Lake is nestled in the scenic Sierra foothills east of Marysville. Constructed for the storage of hydraulic gold mining debris, Englebright Dam is a concrete arch structure. It spans 1,142 feet across and is 260 feet high. The dam is in the steep Yuba River gorge known as the Narrows, holding back a 9-mile long lake with a surface area of 815 acres. The lake is unique in that it offers boat-in camping only.

Hensley Lake is surrounded by the oak woodlands of the Sierra Nevada foothills. The 1,500 acre lake was created by the construction of Hidden Dam on the Fresno River. The dam is 163 feet high, 5,730 feet long and has a capacity of 90,000 acre feet of water. Built by the U.S. Army Corps of Engineers for flood control, irrigation, resource management, and recreation; the lake attracts a growing number of park visitors each year.

Lake Kaweah provides many types of recreation for park visitors. The lake was formed by the construction of Terminus Dam on the Kaweah River. The dam was completed in 1962 by the US Army Corps of Engineers to provide flood control and water conservation. During the spring run-off season it stores 143,000 acre feet of water. Energy production was added in 1990 with the construction of the Terminus Power Plant. The new hydroelectric

plant produces an average of 40 million kilowatt-hours of electricity annually, which is equivalent to 67,000 barrels of oil.

Lake Isabella was created in 1953, when the U. S. Corps of Engineers built earthen dams across two forks of the Kern River to create the Isabella reservoir, Kern County's largest body of water year round with a surface area of 11,200 acres. It is located three hours north of Los Angeles and one hour northeast of Bakersfield, where Hwy. 178 meets Hwy. 155, scenic Lake Isabella lies between two sections of the Sequoia National Forest at an elevation of 2,578 feet.

Martis Creek Lake, located in the Sierra Nevada Mountains near Lake Tahoe, was created upon the completion of Martis Creek Dam in 1972. The dam, 113 feet high and 2,670 feet long, holds back a lake with a capacity of 20,400 acre feet of water. When full, its surface covers 770 acres. The dam and lake provide flood protection and serve as a future water supply source for the city of Reno. The lake, operated by the U.S. Army Corps of Engineers, also provides a focal point for a host of recreation activities.

Lake Mendocino is located in the northern coast range of California where redwood forests meet the wine country. Created by the construction of Coyote Dam on the East Fork of the Russian River in 1958, the lake has a surface area of 1,822 acres. The dam, built and maintained by the U.S. Army Corps of Engineers, is 160 feet high and 3,500 feet long. The structure provides flood damage reduction, water conservation, and hydroelectric power.

New Hogan Lake is located in the oak and brush-covered foothills of the Sierra Nevada Mountains. The 4,400 surface acre lake was created in 1964 with the completion of New Hogan Dam. When full, the lake has 50 miles of shoreline and extends nearly 8 miles upstream to the confluence of the north and south forks of the Calaveras River. The dam provides flood protection to the city of Stockton and water for irrigation, drinking and hydroelectric power.

Pine Flat Lake provides recreation opportunities for hundreds of thousands of visitors annually. Pine Flat Dam is an impressive structure which impounds the waters of the Kings River. Construction of the 429-foot tall dam was completed in 1954. Today, Pine Flat continues to provide flood control and irrigation benefits to the San Joaquin Valley. A hydroelectric plant was completed in 1984. At maximum capacity, the lake holds 1,000,000 acre feet of water.

Lake Sonoma is located in the beautiful coastal foothills of Northern California. The lake is surrounded by world famous vineyards and land that is rich in history. Warm Springs Dam, completed in 1983, is an earthfill structure 319 feet high and 3,000 feet long. When full, the lake has a surface area of more than 2,700 acres and is a perfect setting for a wealth of recreational activities.

Success Lake and dam is a multi-purpose facility built to provide flood control and irrigation. Management of public land and water for wildlife and recreation has provided many opportunities for outdoor activities. Construction of the earth-filled dam was completed in 1961. It spans 3,490 feet across the Tule River and is 142 feet high. When full, the lake holds 82,000 acre feet of water with a surface area of 2,450 acres.

### **3. Specific Tasks to be Accomplished**

The contractor shall provide laboratory support services in accordance with this SOW for the analysis of water samples for organic and inorganic parameters to support water-monitoring activities at twelve lakes.

The laboratory will receive samples in April and August of 2003, and in April and August of 2004 and 2005 if the Government elects to exercise the option years, approximately 4 lots per year. The approximate number of samples and sampling schedule are shown in Attachment 1. The Corps of Engineers, Sacramento District (CESPK) will notify the laboratory approximately one week in advance prior to initial sample shipments. Should sampling be interrupted or delayed, CESPK will notify the Laboratory when sampling is expected to resume. Samples will be delivered to the Laboratory at CESPK expense in sample delivery groups (SDGs) of up to 20 samples each.

Water samples will be collected by the Bureau of Reclamation and delivered to the Laboratory. The IDs for samples taken during the Spring months and will be as follow:

<b><u>Sample ID Numbers</u></b>	<b><u>Lake</u></b>	<b><u>Sample Location</u></b>
BB-Sp-I-1	Black Butte	Inlet (Stony Creek near Fruto)
BB-Sp-I-2	Black Butte	Inlet (N.F. Stony Creek)
BB-Sp-S	Black Butte	Lake - Surface Water
BB-Sp-B	Black Butte	Lake - Bottom Water
EA-Sp-I	Eastman	Inlet (Chowchilla Rvr)
EA-Sp-S	Eastman	Surface
EA-Sp-B	Eastman	Bottom
EN-Sp-I-1	Englebright	Inlet (North Fork Yuba Rvr)
EN-Sp-I-2	Englebright	Inlet (South Fork Yuba Rvr)
EN-Sp-S	Englebright	Surface
EN-Sp-B	Englebright	Bottom
HE-Sp-I	Hensley	Inlet (Fresno Rvr)
HE-Sp-S	Hensley	Surface
HE-Sp-B	Hensley	Bottom
KA-Sp-I	Kaweah	Inlet (Kaweah Rvr)
KA-Sp-S	Kaweah	Surface
KA-Sp-B	Kaweah	Bottom
IS-Sp-I-1	Isabella	Inlet (Kern Rvr at Kernville)
IS-Sp-I-2	Isabella	Inlet (Kern Rvr South Fork)
IS-Sp-S	Isabella	Surface
IS-Sp-B	Isabella	Bottom
MC-Sp-I	Martis Creek	Inlet (Martis Creek & Hwy 267)
MC-Sp-S	Martis Creek	Surface
MC-Sp-B	Martis Creek	Bottom
ME-Sp-I	Mendocino	Inlet (Russian River)
ME-Sp-S	Mendocino	Surface
ME-Sp-B	Mendocino	Bottom
NH-Sp-I	New Hogan	Inlet (Calaveras River)
NH-Sp-S	New Hogan	Surface
NH-Sp-B	New Hogan	Bottom
PF-Sp-I-1	Pine Flat	Inlet (North Fork Kings Rvr)
PF-Sp-I-2	Pine Flat	Inlet (Big Creek)
PF-Sp-I-3	Pine Flat	Inlet (Sycamore Creek)
PF-Sp-S	Pine Flat	Surface
PF-Sp-B	Pine Flat	Bottom
SO-Sp-I-1	Sonoma	Inlet (Dry Creek)
SO-Sp-I-2	Sonoma	Inlet (Warm Springs)
SO-Sp-S	Sonoma	Surface
SO-Sp-B	Sonoma	Bottom
SU-Sp-I-1	Success	Inlet (South Fork Tule Rvr)
SU-Sp-I-2	Success	Inlet (North Fork Tule River)
SU-Sp-S	Success	Surface

SU-Sp-B

Success

Bottom

Additional water samples for MTBE will also be taken. The sample ID is similar to the above format except extra surface samples may be taken. These extra surface samples will be designated XX-YY-SM and XX-YY-SC and XX-YY-SF. “XX” is the same lake code per above, “YY” is SP for spring or SU for summer. “SM” is for a surface water sample near the marina; “SC” is for a surface water sample near the center, and “SF” is for a surface water sample at the far end of the lake.

The point of contact for Sampler:

U. S. Bureau of Reclamation, MP470  
Mr. Tim McLaughlin  
2800 Cottage Way  
Sacramento, CA 95825  
(916) 978-5284

The Laboratory shall report the results using the above sample ID Numbers which should be specified on the chain-of-custody. If the chain of custody does not identify the samples consistent with the above sample ID, the Technical POC must be contacted.

The specifications in Attachment 2 are considered mandatory when invoked by the chain-of-custody. **The Contractor must achieve the minimum reporting limits as defined in this Statement of Work. The Corps of Engineers prior to the contractor performing the work, must approve the proposed method.**

#### 4. TURNAROUND TIME

The required laboratory turnaround time for delivery of final comprehensive certificates of analysis (CCAs) for each SDG is 28 calendar days after collection of the last sample in the SDG.

#### 5. ANALYTICAL SUPPORT, METHODS, AND QUALITY CONTROL REQUIREMENTS

##### 5.1 Analytical Support

The laboratory shall provide and deliver in advance of each sampling event the following items to the site (or other location specified by CESPK) in accordance with Attachment 1 and 3:

- Sufficient number of sample containers. The container shall contain preservatives as specified in Attachment 3. Labels are not required except to identify preserved containers.
- Sufficient number of appropriately insulated shipping containers (coolers).
- Trip and temperature blanks for each shipping container in which samples for volatile organic analysis are to be transported. Trip blank shall consist of a 40 ml vial filled with ASTM Type II water such that no headspace remains in the vial. (Trip blanks are included in the sample estimate shown in Attachment 1 and shall be analyzed in the same manner as field samples.)

##### 5.2 Analytical Methods

The Laboratory shall prepare, extract, and analyze samples in accordance with EPA preparation and analysis methods specified in the table below:

Parameter	Preparation Method	Analytical Method
VOCs + MtBE	5030B	8260B
Metals (including Cr VI)	3010A/7470A/7196A	6000 / 7000 series

Parameter	Preparation Method	Analytical Method
Mercury	1631, Rev B	1631, Rev B
Total Organic Carbon	415.1	415.1
Ammonia Nitrogen	350.1	350.1
Nitrate Nitrogen	353.2	353.2
Kjeldahl Nitrogen	351.1	351.1
Dissolved Orthophosphate	365.1/ 365.2	365.1 / 365.2
Total Phosphorus	365.1/ 365.2	365.1 / 365.2
Total Dissolved Solids, Total Suspended Solids, Total solids	160.1, 160.2, 160.3	160.1, 160.2, 160.3
Total Alkalinity, Bicarbonate Alkalinity, Carbonate Alkalinity	Standard Methods 2320B	Standard Methods 2320B <sup>1</sup>
Sulfate	375.4	375.4
Chloride	325.3	325.3

<sup>1</sup> Standard Methods for the Examination of Water and Waste, 18<sup>th</sup> Edition, 1992

Prior to implementation, alternate or additional procedures require the approval of the CESPCK. In addition to following the specified methods, the following are the requirements with regards to sample analysis.

- Unless otherwise specified, field samples shall be prepared, extracted, digested, and analyzed in a batch of 20 or fewer samples from the same site.
- To the extent practical, samples of the same matrix and analytes shall be grouped together in a batch.
- Sample with a preparation batch shall be prepared consecutively or simultaneously, by the same personnel, and using the same equipment, reagent and glassware lots, and methodology.
- To the extent practical, samples that are prepared, extracted, and/or digested as a batch shall be analyzed as a batch.
- Samples within an analytical batch shall be analyzed during the same analytical run, sequenced by the same personnel, using the same instrument (under the same calibration and tune, as applicable), reagent lots, and methodology.
- Each batch shall include a complete set of QC samples that are associated only with the samples from that batch.
- The analytical results pertaining to each batch and the associated QC samples shall be reported in a single data package.

### 5.2.1 Reporting and Detection Limits

The Laboratory shall make every effort to provide reporting limits at or below the PQLs identified in Attachment 2. When it is not possible to meet specified PQLs due to matrix interference or other technical limitations, the Laboratory shall achieve the lowest possible detection and reporting limits that will produce acceptable data quality.

as defined by the analytical methods and this SOW. Any deviation from the specified PQLs shall be noted and explained in the case narrative.

The laboratory shall provide its procedure for calculating method detection and reporting limits in the cost proposal.

### 5.3 QUALITY CONTROL REQUIREMENTS

Quality Control (QC) samples, as defined by the required method(s) must be analyzed for each analytical batch at the frequency required for the analytical method. QC samples must be included for each SDG. QC samples may be used for more than one SDG if the combined SDGs 1) do not exceed 20 samples, 2) are all submitted for this project, 3) are extract and analyzed as single batch, and 4) are the same matrix. Unit price provided by the Laboratory shall reflect the cost of performing all required QC. No separate charges for method development or analysis of required laboratory QC samples, including laboratory blanks, laboratory control samples, or matrix spike and matrix spike duplicates will be allowed.

The Laboratory shall perform analysis meeting the precision and accuracy goals specified in the following table:

#### PRECISION AND ACCURACY GOALS

Analytical Method	MS/MSD		LCS
	RPD, % Maximum	Recovery, %	Recovery, %
Organic	30	65-135	70-130
Inorganic and General Chemistry	30	75-125	75-125

The Laboratory shall perform chemical analyses in accordance with the requirements established within the specified method and this SOW. When QC checks of an interference-free or known composition do not meet these standards/requirements, corrective action must be taken through proper application of the inspection and services clause. Corrective action may include re-preparation, and/or re-analyses of the affected samples at no additional cost to the government. If the Laboratory fails to promptly perform the required corrective actions, or when the failure cannot be corrected by re-performance, the Government may reduce the contract price or fee payable under the contract to reflect the reduced value of services performed. Continued failure to perform chemical analyses in accordance with these standards/requirements may result in termination of the contract for default.

#### 5.3.1 CALIBRATION

Calibration records shall be generated by the Laboratory, and reviewed and verified by the Laboratory Manager. Calibration records shall be traceable to the specific instrument being calibrated. Calibration record for analytical instruments shall be reproduced and included in data reports of affected field samples. Calibration records shall be retained as part of the project files. Method-specific calibration requirements must be met prior to sample analysis.

Organic standards are to be obtained through a reliable commercial supplier and accompanied by the appropriate documentation from the supplier. Metals standard are to be National Institute of Standards and Technology (NIST) traceable with the appropriate documentation kept on file. Standards for general inorganic shall meet American Chemical Society specifications.

The Laboratory shall have Standard Operating Procedures (SOPs) for standard and reagent preparation. In general, the individual SOPs shall incorporate the following items:

- Documentation of date received, lot number, date opened, and expiration date;
- Documentation of traceability;

- Documentation of preparation, storage, and labeling of stock and working standards solutions; and
- Establishment and documentation of expiration dates and disposal of unusable standards.

### **5.3.2 LABORATORY DOCUMENTATION**

This section describes the requirements for laboratory data reduction and review procedures to which the Laboratory must adhere.

The following are requirements for laboratory documentation:

- The laboratory shall maintain records documenting all phases of sample handling, from receipt to sample disposal.
- Maintain sample chain-of custody.
- Prepare and maintain Sample Cooler Receipt Form.
- All observation and results recorded by the laboratory shall be recorded on laboratory forms or permanently bound logbooks, or entered into computer systems.
- Laboratory logbooks shall be dated and signed by the person performing the activity at the time the activity is performed, and shall be peer reviewed upon completion.
- Entries to the logbooks shall be chronologically ordered and recorded with indelible ink.
- Unused portion of the logbook shall be crossed out.
- Corrections to the logbook shall be made by drawing a single line through the error and entering the correct information. Corrections and additions shall be dated and initialed.
- Computer system shall be configured for restricted access and provide for appropriate backup and audit trails.
- Instrument run logs shall be maintained as to enable a complete reconstruction of the run sequence. Computer logs can be used if all the preceding information is captured. Computer/instrument printout or other independent information can be incorporated into logbooks if such printout can be permanently affixed to the appropriate logbook.

When laboratory procedures are not strictly in compliance with the established proposal, the laboratory must notify the CESPCK chemist. Activities that are not being performed by established QC procedures shall be immediately identified and brought into conformance.

The laboratory personnel prior to report release to ensure the validity of the reported data shall review analytical data generated. This internal data evaluation process shall cover the areas of data generation, reduction, and a minimum of three levels of review, analyst, QA chemist, and the lab manager with signature.

Each step of this review process involves evaluation of data quality based on both the results of the QC data and the professional judgment of those individuals conducting the review. This application of technical knowledge and experience to the data evaluation is essential in ensuring that data of high quality is generated consistently.

### **5.3.3 ANALYTICAL AND STATISTICAL CONTROL PARAMETERS.**

#### **5.3.3.1 Accuracy:**

Unless otherwise specified, accuracy is to be expressed and calculated as the percent recovery of a known concentration of analyte added to a field sample.

Standard reference material:

$$\text{Recovery, \%} = \frac{\text{Test Value}}{\text{True Value}} \times 100$$

Spiked sample:

$$\text{Recovery, \%} = \frac{(\text{SSR} - \text{SR})}{\text{SA}} \times 100$$

Where:

SSR = spiked result  
 SR = sample result  
 SA = spike added

### 5.3.3.2 Precision:

Laboratory precision shall be commonly determined from laboratory duplicate samples (i.e., matrix spike/matrix spike duplicates, or matrix duplicate samples) and expressed and calculated as relative percent difference (RPD) (relative range for duplicates). The RPD for a set of duplicate measurements of a variable (X) is defined as:

$$\text{RPD, \%} = \frac{|X_1 - X_2|}{(X_1 + X_2)/2} \times 100\%$$

Where:

X<sub>1</sub> = matrix spike  
 X<sub>2</sub> = matrix spike duplicate

**Organic:** Accuracy and precision shall be evaluated through the analytical recoveries of matrix spike and matrix spike duplicate (MS/MSD) samples, laboratory control samples (LCS), and by spiking and analyzing project samples with surrogate compounds, where applicable. Only project samples shall be used for matrix spikes (MS/MSD). Blank samples shall not be used for the preparation of MS/MSDs. For each shipment of samples sent to the Laboratory, CESPCK will identify and collect sufficient sample volume for preparation of the original MS/MSD and one re-extraction/re-analysis of the MS/MSD.

MS/MSD samples shall be fortified with a series of method target compounds, while a third aliquot of the sample is to be analyzed unfortified. Accuracy shall be measured in terms of percent recovery of each of the fortified compounds. Both the MS and MSD must be in compliance with accuracy and precision criteria for each spike analyte for the MS/MSD pair to be considered acceptable. Both the MS and MSD must be reextracted and reanalyzed in the event of failure. Failure of different spike analytes on successive runs for specific methods with multiple spike analytes shall to be considered a re-analysis failure and satisfy the requirement for re-analysis. (Note: This provision is meant to apply for a single analytical method. This language shall not be construed to indicate that failing QC results for one analytical method are applicable to another.) Failures of MS/MSD analyses to meet QC criteria require a review, by the laboratory, of the data for the corresponding analytical batch. The Laboratory shall determine whether the failing matrix spike result is the representative of the sample that was spiked or the entire batch. Re-analysis or re-extraction and re-analysis of the batch may be required if trend analysis of the batch data indicates that the analytical system is out of the control. Analyses exhibiting out of control surrogate recoveries shall be re-extracted and reanalyzed once. For GC/MS analyses of volatiles and semi volatiles, SW-846 QC acceptance criteria for surrogate recoveries shall be employed unless otherwise specified.

LCS analyses are spikes on a blank matrix (DI water) to assess laboratory accuracy independent of matrix effects. LCS analyses shall be performed for each batch of samples up to maximum of 20. Failure of the LCS to meet QC criteria requires reanalysis of the LCS sample to determine if the failing result is representative of a transient instrumental condition. (Failing LCS samples for extractable parameters are not to be re-extracted in an attempt to validate the results from initial extraction. If the laboratory employs a routine system of running dual LCS samples, both results must be acceptable for the batch to pass.) A second failure requires re-extraction/reanalysis of the entire analytical batch. In the event of batch re-analysis for GC/MS analyses, SPCC and CCC criteria shall be met for the re-analysis to be valid.

QC criteria for GC/MS analyses shall conform to SW-846 criteria for surrogate recoveries and CLP standards for the target list of compounds to be spiked for MS/MSD analyses. LCS criteria for GC/MS analyses shall use CLP criteria for MS/MSD analyses as a minimum standard. QC criteria for LCS recoveries should generally be more stringent relative to MS/MSD criteria. Laboratory methods used to generate QC criteria shall include procedures for treatment of outlier data.

Under certain limited circumstances, such as the occurrence of gross chromatographic interference, it is reasonable to infer that reanalysis or reextraction and reanalysis would produce the same result. Under these circumstances reextraction and reanalysis as described in the specification would not be required. However, if this argument is proposed by the laboratory the data package submitted must include chromatography (and any raw data necessary), presented at an attenuation where aspects of the chromatography are clearly visible, to substantiate assertions of this type. This language shall not be interpreted to indicate that all appropriate sample cleanups are required or that failure to execute appropriate sample cleanups prior to concluding that matrix effects are operative will be acceptable to CESPCK.

Inorganic and General Chemistry: Accuracy and precision for inorganic and general chemistry analyses shall be evaluated through the collection and analysis of matrix spike samples and laboratory control samples (LCS). For each shipment of samples sent to the Laboratory, CESPCK will identify and collect sufficient sample volume for preparation of the original MS/MSD and one re-extraction/re-analysis of the MS/MSD.

The MS/MSD samples shall be fortified with a series of method target compounds, while a third aliquot of the sample shall be analyzed unfortified. Accuracy shall be measured in terms of percent recovery of each of the fortified compounds. Both the MS and MSD must be in compliance with accuracy and precision criteria for each spike analyte for the MS/MSD pair to be considered acceptable. MS/MSD analyses not meeting the 75-125% are to be re-extracted/reanalyzed once at no additional cost.

LCS analyses are matrix spikes on a blank matrix (DI water) to assess laboratory accuracy independent of matrix effects. LCS analyses are to be performed for each batch of samples up to maximum of 20. Failure of the LCS to meet QC criteria requires reanalysis of the LCS sample to determine if the failing result is representative of a transient instrumental condition. (Failing LCS samples for extractable parameters are not to be re-extracted in an attempt to validate the results from initial extraction. If the laboratory employs a routine system of running dual LCS samples, both results must be acceptable for the batch to pass.) A second failure requires re-extraction/reanalysis of the entire analytical batch.

The interference tests specified by paragraph 8.5 of SW-846 Method 6010B and by paragraph 8.6 of SW-846 Method 7000A shall be performed on one representative sample from each analytical batch. The choices of samples for performance of the interferences tests shall be conservative such that this sample displaying characteristic ness most likely to results in interference is selected for the procedure. NO corrective action is specified by Method 6010B, however, the results of the interference test shall be documented in the narrative if the results are out of control. The specific corrective action described by Method 7000A is to be executed by the laboratory on failure of interference tests for 7000 series methods. The laboratory may propose alternatives to the standard procedures described in SW-846 for 7000 series methods such as post digestion spikes for all samples. In this case corrective action for ailing post digestion spikes should be consistent with the corrective action described in Method 7000A. Alternatives to the standard procedures specified by Method 7000A that may be proposed by the laboratory must be approved by CESPCK.

**SENSITIVITY.** Sensitivity shall be expressed in terms of detection and quantitative limits for each type of analytical measurement. This SOW required reporting limits for each analyte is specified in Attachment 2 of this SOW:

The following definition apply to analyses for this SOW:

Method Detection Limit. The Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte. MDLs shall be determined for all target analytes in an interference-free matrix, typically reagent water for aqueous samples, and a purified solid matrix (e.g., sand) for soil/sediment samples. The laboratory may determine MDLs using procedures presented in 40 CFR, Part 136,

Appendix B, or equivalent statistical approach. The validity of the MDL study is verified per CFR requirements by comparing the mean value of the measured MDL spikes to the calculated MDL. The MDLs shall be preparatory method-specific, and include any clean-up methods used. The MDL sample shall be taken through the same process used initially to establish the MDL values. When multiple instruments or confirmation columns are used for the same method, separate MDL studies may be replaced by the analysis of an MDL check sample on all instruments/columns. The MDLs must be updated annually and whenever major instrument maintenance, or changes in instrumentation or instrumental conditions to verify the current sensitivity of the method.

***Note: The Contractor must possess a list of valid MDL studies for all analytes identified in this SOW.***

Reporting Limits (RLs). The reporting limit is the lowest detection level that can be assigned a quantitative value of a given method and matrix. The RL is set at three to five times the MDL although may be lowered if it 1) is necessary to meet project requirements and 2) can be demonstrated by analysis of project samples. The Laboratory shall report all results, but those results between the MDL and RL will be flagged with a “J” as quantitatively estimated.

If dilution to bring the reported concentration of a single compound of interest results in non-detect values for any other analyte with detected concentrations in the initial analysis the results of the original run and the dilution shall be reported with the appropriate notations in the narrative.

Failure of the Laboratory to present RLs may result in the use of another laboratory for the project. Failure of the contract laboratory to achieve RLs specified in this SOW during the course of the project may result in rejection of data with re-sampling/re-analysis, except as noted below.

Matrix effects (i.e., highly contaminated samples requiring dilution for analysis, dilution to bring detected levels within the range of calibration and matrix interference causing the elevation of detection limits) shall be considered in assessing compliance with the requirements for sensitivity. A detailed analysis of all failures to meet requirements for sensitivity shall be included in the narrative section of the CCA.

Contract Laboratory Internal QC Checks: The analytical batch is defined as the preparation batch. The analytical batch will not exceed 20 samples and is defined as a set of samples that are extracted/analyzed concurrently and sequentially. The analytical batch is to be analyzed sequentially on a single instrument. Significant gaps (greater than two hours) in the analytical sequence will result in the termination of the previous sequences and the initiation of a new analytical sequence. The practices of a holding batch open for as much as two weeks and performing relative to the requirements of these specifications. Data reported by the laboratory that are found to be associated with batch QC samples that are not extracted concurrently or were not analyzed in the same sequence on the same instrument relative to the primary sample results are to be rejected. If the batch size is found to exceed 20 samples the data shall be rejected.

The Laboratory is to analyze internal QC samples at the frequency specified by the method and in the specification for each applicable analytical method. The QC samples for each analytical batch are to include method blanks, MS/MSD samples for organic analyses, laboratory duplicates and MS for inorganics analyses, and LCSs. The matrix used for LCS analyses shall be reagent grade water for aqueous analyses. Failure to include either matrix spike or LCS samples with each analytical batch will result in credit for one-third of the cost of associated analyses. Failure to incorporate both a matrix spike and a LCS sample will result in rejection of data.

Contamination in method blanks, reagent blanks, instrument blanks, extraction blanks, initial calibration blanks, and continuing calibration blanks are not to be above the one and half times MDL. Method blanks shall be analyzed at a frequency of at least one per analytical batch for each test method (one every 12 hours for GC/MS analyses.)

Laboratory contamination in reagent blanks, instrument blanks, extraction blanks, initial calibration blanks, and continuing calibration blanks are to be below the MDL. Data found to be associated with blanks containing target analytes at or above the MDL might be rejected with re-sampling/re-extraction/re-analysis.

Second column confirmation for all GC sample analyses involving identification of discrete peaks with detected concentration will be required at no additional charge. Second column confirmation is not required for concentration reported between the MDL and RL.

**REPRESENTATIVENESS:** The Laboratory shall ensure that aliquots used for sample analysis are representative of the whole sample without compromising sample integrity.

- Water sample: For extractable organics, perform a whole-bottle extraction with a solvent rinse of the sample container. For purgeable organics, take the test aliquot from a VOC vial containing no headspace. For inorganics and general chemistry, take the test aliquot after mixing to promote subsample homogeneity.
- In addition, laboratory data shall be validated to verify the SOPs were followed and method requirements were met during the analysis of project samples, specifically, laboratory sample storage, holding times, subsampling procedures, method blanks, and evidence of matrix interference shall be assessed.

## 6. TREATMENT OF OUTLIERS

An outlier in laboratory data may occur as a consequence of an out-of-control system or through natural random variance. If there is no indication of error in the measurement and unless otherwise directed by the CESPCK, or specified in the method, the Laboratory shall use ASTM method E178-94, *Standard Practice for Dealing with Outlying Observations* to establish a rationale for treating outlying data. Once identified, outlier data to be characterized with respect to the cause, nature, and degrees of exceedances. Available information relevant to the measurement process that produced the suspect data are to be reviewed for calculation and transcription errors, clear indications of instrument malfunction, and verification that the measurement corresponds to the intended sample or measurement location. These measures may be necessary when the following occurs:

- QC data are not within the control limits for precision and accuracy;
- Blank contain contaminants above the specified levels;
- Calibration data or instrument performance parameter are not within acceptance criteria;
- Undesirable trends are observed in the QC data or calibration data; or
- There are unusual changes in instrument sensitivity or performance.

## 7. LABORATORY DATA REVIEW RESPONSIBILITIES

Prior to submitting data to CESPCK, the Laboratory is responsible for reviewing its data; implementing corrective actions where possible; reporting nonconformance and the corresponding corrective actions to CESPCK. Analytical data are to be reviewed by the Laboratory in conformance with this SOW and proscribed analytical methods. The following information is to be evaluated by the laboratory, as appropriate for each analysis:

- Sample chain-of-custody documentation is complete and correct;
- Sample preparation information is complete and correct;
- Sample integrity has been maintained;
- Instrument performance criteria have been met;
- Calibration criteria have been met;
- Holding times, sample preservation, and sample storage criteria have been met;
- Analyte identification and quantification are correct;
- QC samples and method blanks are within control limits;
- Documentation (including the narrative) is complete and correct; and
- Case narrative report have been prepared and delivered in accordance with the SOW.

## 8. HOLDING TIMES

Sample must be analyzed within the holding times specified in Attachment 3. Holding times are calculated from the time that the sample is collected until it is extracted or analyzed (as appropriate). The Laboratory is responsible for meeting all holding times for all samples that are received by the Laboratory on or before 50 percent of the holding

time period has expired. The Laboratory is responsible for ensuring that it can accommodate the anticipated sample load and is required to provide CESPCK with advance warning of potential capacity problems. Failure to meet holding time requirement may result in rejection of data and require resampling and reanalysis at the Laboratory's expense.

## **9. DATA ARCHIVE**

The Laboratory shall preserve information regarding sample analysis (calibration records, calculations, SDG, etc.) such that analytical processes can be reconstructed. The Laboratory shall maintain data associated with the project for the duration of the project or a minimum of five years following the submittal of the Comprehensive Certificate of Analysis (CCA).

## **10. HARD COPY DELIVERABLES**

**10.1** The Laboratory shall provide final CCA for each SDG. The Laboratory shall address the following requirements in preparing comprehensive certificates of analysis:

- A. A "Cooler Receipt Form" shall be completed by the Laboratory when documenting sample conditions on arrival at the laboratory. Original copies of cooler receipt forms as well as original copies of chain of custody forms shall be provided with certificates of analysis.
- B. For each analytical method the Laboratory shall report all analytes as a detected concentration or as less than the reporting limit. All samples with out of control spike recoveries being attributed to matrix interference will be designated as such. All soil samples will be reported on a dry weight basis with the percent moisture reported for each sample. Dilution factors, date of extraction, date of analysis, and practical quantitation limits shall be reported for each analyte.
- C. Reports of method blanks shall include all analytes for each analytical method. Analytical results for each sample shall be clearly associated with a particular method blank. Any detected concentration found in method blanks shall be reported. Reports of concentrations below the technical detection limit are necessary to evaluate low-level determinations of target compounds in samples.
- D. Surrogate spike recoveries shall be reported for all applicable methods. The report shall also specify the control limits for surrogate recoveries. Any out-of-control recoveries shall result in the sample being rerun once. If subsequent analyses result in out of control recoveries both results shall be reported and the data flagged.
- E. MS/MSD recoveries shall be reported for all analyses. All sample results shall be designated as corresponding to a particular set of MS/MSD analyses. MS/MSD analyses not meeting quality control criteria specified in the QAPP shall be rerun once. If subsequent analyses result in out of control recoveries both results shall be reported and the data flagged. Only samples from this project shall be used for MS/MSD analyses. (The Laboratory shall not use samples from other projects for MS/MSD analyses.) The report shall also specify control limits for spike recoveries and RPD for each spiked analyte.
- F. Results for laboratory duplicates shall be reported with RPD limits for duplicate analyses.
- G. LCS results shall be reported with control limits for LCS analyses. Analytical results for each sample shall be clearly associated with a particular LCS sample.
- H. Results of initial and continuing calibration analyses for all analyses shall be included in the data package. Continuing calibration results shall be organized such that sample results shall be clearly correlated with the calibration check samples that bracket the sample results. Injection records for all sample analyses shall be included with the calibration data. Summaries of calibration data should be provided as a CLP Form Six and Seven or equivalent for organics analyses and Form II

modified for SW-846 analyses for inorganics. (Note: Copied pages of handwritten laboratory notebooks will be unacceptable to fulfill the requirements of these specifications.)

- I. The Laboratory shall prepare a summary of all samples with detected concentrations of target compounds indexed by method and by sample ID.
- J. The Laboratory shall prepare a summary of all surrogate recoveries for organics analyses for each applicable method with the acceptable recovery range clearly indicated. This summary shall be performed for all samples for each analytical method involving surrogate spikes.
- K. The Laboratory shall prepare a summary of all Matrix Spike/Matrix Spike Duplicate analyses for each applicable method indicating acceptable recovery ranges and QC acceptance criteria for RPD.
- L. The comprehensive certificate of analysis shall contain a narrative section identifying samples not meeting quality control criteria and any other out of control condition. The narrative shall describe the corrective action taken. If "matrix effects" are invoked as a cause for out of control recoveries a subsection of the narrative shall present a detailed justification for this assertion to include a summary of all relevant quality control data.
- M. All data for analyses during the period covered by the comprehensive certificate of analysis shall be included as an appendix to the comprehensive report. This data shall be presented on numbered pages with an index or table of contents describing the contents of the appendix.
- N. Documentation showing that that particular lab meets NELAP/ELAP certification as detailed in Paragraph 14.

The comprehensive certificate of analysis shall be prepared for each group of samples submitted to CESPK no later than 28 days after sample acquisition in the field. This submittal is subject to review and comment by CESPK. The Laboratory will be directed to resubmit the comprehensive certificate of analysis at no additional charge to the Government if the Laboratory does not execute the conditions of these specifications.

## **10.2 Raw Data Packages:**

**10.2.1 Requirements for submittal:** Raw data packages shall be submitted to CESPK for 10% of all samples analyzed by the Laboratory. The CESPK will select samples for raw data packages to include all analyses and matrices, to provide temporal representation, to provide data in particular areas of interest, and to provide data at periods of maximum loading of the Laboratory. The Laboratory will be notified of the samples for which raw data packages on the Chain-of-Custody. Raw data packages shall be delivered in place of the Comprehensive Certificate of Analysis. Raw data packages shall be delivered to the CESPK within 28 days of the time of sample acquisition in the field.

**10.2.2 Organics Analyses:** The raw data package for organics analyses shall consist of a case narrative, chain-of-custody documentation, summary of results for environmental samples, summary of QA/QC results, and the raw data. Detailed descriptions of the requirements for each component of an organics raw data package are provided in the following sections.

**10.2.2.1 Case Narrative:** The case narrative shall be written on laboratory letterhead and the release of data shall be authorized by the laboratory manager or his/her designee. Items to be included in the case narrative are the field sample ID with the corresponding laboratory ID, parameters analyzed for in each sample and the methodology used (EPA method numbers or other citation), a statement on the status of samples analyzed with respect to holding times (met or exceeded), detailed description of all problems encountered, discussion of possible reasons for out of control QA/QC criteria, and observations regarding any occurrences which may effect sample integrity or data quality.

**10.2.2.2 Chain-of-Custody Documentation:** Legible copies of Chain-of-Custody forms for each sample shall be maintained in the data package. Cooler login sheets shall be associated with the corresponding Chain-of-Custody form. Any internal laboratory-tracking document shall be included.

**10.2.2.3 Summary of Environmental Results:** For each environmental sample analysis the summary shall include field ID and corresponding laboratory ID, sample matrix, date of sample extraction (if applicable), date and time of analysis, identification of the instrument used for analysis, GC column and detector specifications (if applicable), weight or volume of sample used for analysis/extraction, dilution or concentration factor used for the sample extract, percentage of moisture in the sample, method detection limit or sample quantitation limit, definitions of any data qualifiers used, and analytical results.

**10.2.2.4 Summary of QA/QC Results:** The following QA/QC results shall be presented in summary form. Details specified in Paragraph: SUMMARY OF ENVIRONMENTAL RESULTS (Organics Analysis) shall also be included for the summary of QA/QC results. Acceptance limits for all categories of QC criteria shall be provided with the data. All summaries will be presented on standard forms. Use of CLP standard forms is not necessary, however submission of standard instrument output alone is unacceptable to satisfy the requirements for raw data packages.

- A. Initial Calibration. The concentrations of the standards used for analysis and the date and time of analysis. The response factor, percent relative standard deviation (%RSD), and retention time for each analyte (as applicable, GC and GC/MS analyses) shall be included in initial calibration summaries. A statement should also be made regarding the samples or dates for which a single initial calibration applies.
- B. Daily Calibration and Mid-level Standard: The concentration of the calibration standard used for daily calibration and/or the mid-level calibration check shall be reported. The response factor, percent difference, and retention time for each analyte shall be reported (GC and GC/MS). Daily calibration information shall be linked to sample analyses by summary or by daily injection or analysis logs.
- C. Method Blank Analyses: The concentrations of any analytes found in method blanks shall be reported. The environmental samples and QA/QC analyses associated with each method blank shall be stated.
- D. Surrogate Standard Recovery: The name and concentration of each surrogate compound added shall be detailed. The percent recovery of each surrogate compound in the samples, method blanks, matrix spike / matrix spike duplicates and other QA/QC analyses shall be summarized with sample ID's such that the information can be linked to sample and QA/QC analyses.
- E. Precision and Accuracy: For MS /MSD analyses the sample results, spiked sample results, percent recovery, and RPD with the associated control limits shall be detailed. For laboratory duplicate analyses the RPD between duplicate analyses shall be reported as applicable. For laboratory QC Check and/or LCS analyses the percent recovery and acceptable control limits for each analyte shall be reported. All batch QC information shall be linked to the corresponding sample groups.
- F. Retention Time Windows (GC, GC/MS): The retention time window for each analyte for both primary and confirmation analyses shall be reported. Retention time windows are to be updated daily per EPA SW-846.
- G. Compound Identification (GC, GC/MS): the retention times and the concentrations of each analyte detected in environmental and QA/QC samples shall be reported for both primary and confirmation analyses.
- H. Method Detection Limits: Results of the most current detection limit study shall be provided in the raw data package.

- I. Injection Record: Injection logs for all instruments used for analysis of project samples shall be provided indicating the date and time of analysis of project samples and the associated laboratory QA/QC samples (initial calibration, continuing calibration check, method blank, matrix spikes, etc.).

**10.2.2.5 Raw Data:** Legible copies of all raw data shall be organized systematically on numbered pages. The raw data for compound identification and quantitation must be sufficient to support all results presented in other sections of the raw data package. All raw data will be presented on standard forms and accompanied by the instrument output. Use of CLP standard forms is not necessary, however submission of standard instrument output alone is unacceptable to satisfy the requirements for raw data packages.

- A. GC Analyses: This section of the data package shall include legible copies of the raw data for environmental samples (arranged in increasing order of field ID, primary and confirmation analyses), instrument calibrations, QA/QC analyses, sample extraction and cleanup logs, instrument analysis logs (injection record) for each instrument used, and GC/MS confirmations if applicable. The raw data for each analysis shall include chromatograms (preferably with target compounds, internal standard, and surrogate compounds labeled by name) with a quantitative report and/or area print out.
- B. GC/MS Analyses: This section of the data package shall include legible copies of the raw data for environmental samples (arranged in increasing order of field ID, spectrometer tuning and mass calibration reports, initial and continuing instrument calibrations, QC analyses, sample extraction logs, and instrument analysis logs (injection record) for each instrument used. The raw data for each analysis shall include chromatograms (preferably with target compounds, internal standards, and surrogate compounds labeled by name) and enhanced spectra of target compounds and/or tentatively identified compounds with the associated best-matched spectra. Quantitative reports for all analyses shall be included in the data package.

**10.2.3 Inorganic Analyses:** The raw data package for inorganic analyses shall consist of a case narrative, chain-of-custody documentation, summary of results for environmental samples, summary of QA/QC results, and the raw data. Detailed descriptions of the requirements for each component of an inorganic raw data package are provided in the following sections.

**10.2.3.1 Case Narrative :** The case narrative shall be written on laboratory letterhead and the release of data shall be authorized by the laboratory manager or his/her designee. Items to be included in the case narrative are the field sample ID with the corresponding laboratory ID, analyses parameters for each sample and the methodology used (EPA method numbers or other citation), a statement on the status of samples analyzed with respect to holding times (met or exceeded), detailed description of all problems encountered, discussion of possible reasons for out of control QA/QC criteria, and observations regarding any occurrences which may effect sample integrity or data quality. The case narrative shall be sufficiently detailed such that the process of analysis can be reconstructed (i.e. if samples are diluted to bring results into the linear dynamic range, or re-extracted for QC failures the course of analysis shall be detailed in the case narrative.)

**10.2.3.2 Chain-of-Custody Documentation:** Legible copies of Chain-of-Custody forms for each sample shall be maintained in the data package. The date of receipt must be described on the Cooler login sheets along with the corresponding Chain-of-Custody form. Any other internal laboratory tracking documents shall be included.

**10.2.3.3 Summary of Environmental Results:** For each environmental sample analysis the raw data package should include field ID and corresponding laboratory ID, sample matrix, date of sample digestion (as applicable), date and time of analysis, identification of the instrument used for analysis, instrument specifications, weight or volume of sample used for analysis/digestion, dilution or concentration factor used for the sample extract, percentage of moisture in the sample, method detection limit or sample quantitative limits, definitions of any data qualifiers used, and analytical results.

**10.2.3.4 Summary of QA/QC Results:** The following QA/QC results shall be presented in summary form. Details specified in Paragraph: SUMMARY OF ENVIRONMENTAL RESULTS (Inorganic Analysis) shall also be

included for the summary of QA/QC results. All summaries will be presented on standard forms. Use of CLP standard forms is not necessary, however submission of standard instrument output alone is unacceptable to satisfy the requirements for raw data packages.

- A. Instrument Calibration: The order of reporting of calibrations for each analyte must follow the temporal order in which standards were analyzed.
- B. Initial Calibration: The source of the calibration standards, true value concentrations, found concentrations, the percent recovery for each element analyzed, and the date and time of analysis shall be reported.
- C. Continuing Calibration Verification: The source of the calibration standards, true value concentrations, found concentrations, the percent recovery for each element analyzed, and the date and time of analysis shall be reported.
- D. Method Blank Analyses: The concentrations of any analytes found in initial calibration blanks, continuing calibration blank, and in the preparation blank shall be reported. The date and time of analysis shall also be reported.
- E. Interference Check Sample: The source of the interference check sample, true value concentrations, found concentrations, the percent recovery for each element analyzed, and the date and time of analysis shall be reported.
- F. Precision and Accuracy - Matrix Spikes and Duplicates: For matrix spike analyses the sample results, spiked sample results, percent recovery, the spiking solution used, and the control range for each element shall be detailed. For post digestion spikes the concentration of the spiked sample, the sample result, the spiking solution added, percent recovery and control limits shall be detailed. For laboratory duplicates the original concentration, duplicate concentration, relative percent difference, and control limits shall be detailed. Date and time for all analyses shall be recorded.
- G. Precision and Accuracy - Laboratory Control Samples: The source of the laboratory control sample, true value concentrations, found concentrations, the percent recovery for each element analyzed, and the date and time of analysis shall be reported.
- H. Method of Standard Additions (MSA): This summary must be included when MSA analyses are required. The absorbance values and the corresponding concentration values, the final analyte concentrations, and correlation coefficients shall be reported for all analyses. Date and time of analysis shall be recorded for all analyses.
- I. ICP Serial Dilution: The initial and serial dilution results with percent difference shall be reported.
- J. ICP Linear Ranges: For each instrument and wavelength used the date on which the linear range was established, the integration time, and the upper limit concentration shall be reported.
- K. ICP Inter-element Correction Factors: For each instrument and wavelength used the date on which correction factors were determined shall be detailed. Specific correction factors for Al, Ca, Fe, Mg, and any other element and the analytes to which they are applied shall be detailed.
- L. Instrument Detection Limits: Results of the most current detection limit study shall be provided in the raw data package.
- M. Analysis Record: Analysis logs for all instruments used for analysis of project samples shall be provided indicating the date and time of analysis of project samples and the associated laboratory QA/QC samples (initial calibration, continuing calibration check, method blank, matrix spikes, etc.).

**10.2.4 Raw Data:** Legible copies of all raw data shall be organized systematically on numbered pages. The raw data for compound identification and quantitation must be sufficient to support all results presented in other sections of the raw data package. This section of the data package shall include legible copies of the raw data for environmental samples (arranged in increasing order of field ID), instrument calibrations, QA/QC analyses, sample extraction and cleanup logs, instrument analysis logs for each instrument used. Instrument analysis logs are particularly important since they provide the basic link between all sample analyses and QC information. (Calibrations, matrix spike, etc.) Instrument analysis logs for all instruments used for sample analyses for this project shall be provided for all days on which analysis was performed. The raw data for each analysis shall include measurement print outs and quantitation reports for each instrument used. Records of absorbance, titrimetric or other measurements for wet chemical analysis shall be recorded. All raw data will be presented on standard forms and accompanied by the instrument output. Use of CLP standard forms is not necessary, however submission of standard instrument output alone is unacceptable to satisfy the requirements for raw data packages.

Addresses for data package shipment:

US Army Corps of Engineers  
ATTN: Tommy Waldrup  
1325 J Street (CESPK-ED-E)  
Sacramento, CA 95814-2922  
(916) 557-7456

## **11. FEDERAL GOVERNMENT PAPERWORK REDUCTION ACT:**

In addition to the hard copy deliverables, the contractor shall submit all primary lab results in electronic format. The acceptable electronic format is ADR EDD format. The Government will continually review the electronic format in the future. At some future date the Government may waive the requirement for the hard copy; if so, the contract will be modified by the Contracting Officer to so state.

## **12. SAMPLE STORAGE AND DISPOSAL**

The Laboratory shall retain all samples for 30 days after the CCA have been accepted by CESPK. The Laboratory shall return samples only as specifically requested by CESPK. The Laboratory shall be responsible for disposal of sample not returned to CESPK.

## **13. TECHNICAL DIRECTION**

The contractor shall take no direction from any Government employee other than the Contracting Officer that changes the price, schedule or other terms and conditions of this contract. Changes authorized by the Contracting Officer will be in the form of a written modification, signed by the Contracting Officer, received by the Contractor prior to acting upon those changes. The contractor will comply with the changes clause of this contract by notifying the Contracting Officer when the contractor believes direction has been given from persons other than the Contracting Officer. Any direction given by any Government employee outside their authority must be reported to the Contracting Officer. Contracting Officer Representatives (CORs) are limited to the authorities stated in the COR appointment letters.

## **14. POINTS OF CONTACT**

The technical point of contact for this project is Mr. Tommy Waldrup at 916/557-7673. Mr. Waldrup can be reached by email at [Tommy.L.Waldrup@usace.army.mil](mailto:Tommy.L.Waldrup@usace.army.mil)

The Contract Specialist on this project is Ms. Rachel Rosas at 916/557-7716. Ms. Rosas can be reached by email at [Rachel.A.Rosas@usace.army.mil](mailto:Rachel.A.Rosas@usace.army.mil)

The Contracting Officer on the project is Ms. Judith Grant at 916/557-5244. Ms. Grant can be reached by email at [Judith.E.Grant@usace.army.mil](mailto:Judith.E.Grant@usace.army.mil)

## **15. PAYMENT SCHEDULE**

Payment shall be made at the end of each event in April and August of 2003, in April and August of 2004, and in April and August of 2005 (if the Government exercises the option), and upon receipt of Lab Data Package. The contractor will only be paid for work actually performed. Every invoice will be accompanied by a full accounting of each Line Item billed, the actual quantity being billed and supporting documentation to support the actual quantities. See Estimated Quantity Line Item paragraph in Section F.

## **16. INVOICE SUBMISSION**

The Government shall pay the Contractor upon submission of proper invoices for supplies delivered and accepted or services rendered and accepted for the portion of work actually performed under this contract. Invoices will be submitted to:

USAED, Finance Center  
Attention: CEFC-AO-P  
5720 Integrity Drive  
Millington, Tennessee 38054-5005

An additional copy of the invoice shall be provided to:

One each to:  
USAED, Sacramento  
CESPK-ED-E (Tommy Waldrup)  
1325 J Street  
Sacramento, California 95814-2922

One copy for contract administration and tracking purposes only to:

USAED, Sacramento  
CESPK-CT (Rachel Rosas)  
DACW05-03-C-XXXX  
1325 J Street  
Sacramento, California 95814-2922

## **17. LABORATORY CERTIFICATIONS**

All prime and subcontractor laboratories must be NELAP/ELAP certified and/or validated by the U.S. Army Corp of Engineers. Provide one copy of documentation with submission of all deliverables.

ATTACHMENT 1:  
TARGET ANALYTES  
&  
REPORTING LIMIT REQUIREMENT

Table 1  
Summary of Data Quality Objectives for Metals

Metals	Bid Schedule Item #	Test Methods	Min Reporting Limit (ug/L)	Action Level (ug/L)
Arsenic (As)	0003	6000/7000	4	50
Cadmium (cd)	0003	6000/7000	1	2
Chromium (Cr)	0003	6000/7000	5	11
Copper (Cu)	0003	6000/7000	5	9
Lead (Pb)	0003	6000/7000	2	2.5
Manganese (Mn)	0003	6000/7000	5	50
Mercury (Hg) Unfiltered	0004	1631/Rev B	0.0005	0.012
Selenium (Se)	0003	6000/7000	1	5
Zinc (Zn)	0003	6000/7000	20	50
Iron (Fe)	0003	6000/7000	50	300
Sodium (Na)	0003	6000/7000	1000	1000
Potassium (K)	0003	6000/7000	1000	1000
Calcium (Ca)	0003	6000/7000	500	NA
Magnesium (Mg)	0003	6000/7000	10	50

Table 2

## Laboratory Specifications for General Chemistry

Parameters	Bid Schedule Item #	Test Method	Min Reporting Limit (Mg/L)	Action Level (Mg/L)
Total Organic Carbon	0005	EPA 415.1	1	1
Ammonia Nitrogen	0006	EPA 350.1	0.01	0.04
Nitrate Nitrogen	0007	EPA 352.1	0.01	0.04
Kjeldahl Nitrogen	0008	EPA 351.1	0.01	0.04
Dissolved OrthroPhospate	0009	EPA 365.1	0.01	0.04
Total Phosphorus	0010	EPA 365.1	0.01	0.04
Total Dissolve Solids Total Suspended Solids Total Solids	0011	EPA 160.1, 160.2, 160.3	1	5
Total Alkalinity Bicarbonate Alkalinity Carbonate Alkalinity	0012	Standard Methods 2320B	1	10
Sulfate	0013	EPA 375.4	0.5	1
Chloride	0014	EPA 325.3	0.5	1
COD	0002	EPA 410.4	50	50

Table 3 Laboratory Specifications for Volatile Organic Analytes				
Parameter	Bid Schedule Item #1	Test Method	Min Reporting limit (ug/L)	Action Level (ug/L)
Tert-Amyl methyl ether (TAME)	0001	8260B	2.0	NA
2-Methyl-2-Propanol (TBA)	0001	8260B	10.0	NA
Methyl-t-butyl ether (MTBE)	0001	8260B	2.0	NA
Diisopropyl ether	0001	8260B	2.0	NA
Ethyl tert-butyl ether (ETBE)	0001	8260B	1.0	NA

ATTACHMENT 2:  
SUMMARY OF CONTAINER, PRESERVATION  
AND  
HOLDING TIME REQUIREMENTS

Parameters/Methods	Quantity/Sample Size	Required Preservation	<u>Storage</u>	Maximum Holding Times
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VOCs/8260B	(3) 40 ml VOA glass vials	No Headspace HCl to PH <2	4 <sup>0</sup> C; store away from light	14 days
8081A	(2) 1 L amber glass	None	4 <sup>0</sup> C; store away from light	7 days/40 days <sup>1</sup>
8082	(2) 1 L amber glass	None	4 <sup>0</sup> C; store away from light	7 days/40 days <sup>1</sup>
Selected Metals 6000/7000 Series	(1) 500 ml polyethylene	HNO <sub>3</sub> to PH <2	4 <sup>0</sup> C; store away from light	6 months
Mercury/1631, Rev B	(1) 500 ml glass	HNO <sub>3</sub> to pH <2	4 <sup>0</sup> C; store away from light	28 days
TOC/415.1	(1) 250 ml polyethylene	NA	4 <sup>0</sup> C; store away from light	28 days
Anions <sup>3</sup> 300 Ion Chromatography	(1) 1 L polyethylene	NA	4 <sup>0</sup> C; store away from light	See notes
Alkalinity/310.1, 310.2	(1) 1-L polyethylene	NA	4 <sup>0</sup> C; store away from light	48 hrs
Dissolved Solids/160.1, 160.2, 160.3	(3) 1L-polyethylene	NA	4 <sup>0</sup> C; store away from light	7 days
Temperature Blank	(1) 40 ml VOA glass vial	No headspace	4 <sup>0</sup> C; store away from light	NA
Trip Blank for VOCs	(3) 40 ml VOA glass vials	No headspace	4 <sup>0</sup> C; store away from light	14 days

## Notes:

<sup>1</sup> Extraction within 7 days/Analysis within 40 days;<sup>2</sup> Extraction within 24 hours/Analysis within 7 days;<sup>3</sup> Anions = Ammonia (14), Nitrate<sup>4</sup>, Kjeldahl Nitrogen(28), Diss Orthrophosphate<sup>4</sup>, Sulfate (28), Chloride (28);<sup>4</sup> Nitrate and Orthophosphate = 48 hrs

ATTACHMENT 3:

COOLER RECEIPT FORM





**COOLER RECEIPT FORM**

Delivery Order No. \_\_\_\_\_

Cooler No: \_\_\_\_\_ of \_\_\_\_\_

Project \_\_\_\_\_

Date Received \_\_\_\_\_

LABORATORY NAME \_\_\_\_\_ INSPECTOR \_\_\_\_\_ Date \_\_\_\_\_

1. Did cooler come with a shipping slip (air bill, etc.)?..... Yes No

If yes, enter carrier name & air bill number here: \_\_\_\_\_

2. Were custody seals on outside of cooler?..... Yes No

How many & where: \_\_\_\_\_ Seal date: \_\_\_\_\_ Seal name \_\_\_\_\_

3. Did you screen samples for radioactivity using the Geiger Counter?..... Yes No

4. Were custody seals unbroken and intact at the date and time of arrival?..... Yes No

5. Were custody papers sealed in a plastic bag & taped inside to the lid?..... Yes No

6. Were custody papers filled out properly (ink, signed, etc.)?..... Yes No

7. Did you sign custody papers in the appropriate place?..... Yes No

8. Was project identifiable from custody papers? If yes, enter name at top of form. Yes No

9. If required, was enough ice used?..... Type of ice \_\_\_\_\_ Yes No

10. Did all bottles arrive unbroken and were labels affixed and legible?..... Yes No

11. Does the information on each label agrees with custody papers?..... Yes No

12. Was correct container used for tests indicted?..... Yes No

13. Were bubbles absent in VOA samples? If no, List by sample number \_\_\_\_\_ Yes No

14. Were the correct preservatives added?..... Yes No

15. What was cooler temperature? \_\_\_\_\_ Within  $4 \pm 2^{\circ}\text{C}$ ?

If no, notify US Army Corps of Engineers (Project Engineer) at (916) 557-7456

16. Comments \_\_\_\_\_

\_\_\_\_\_

DACW05-03-B-0001

**ATTACHMENT 4**

**LABORATORY AND SUBCONTRACTOR  
CERTIFICATION & REQUIREMENTS**

## Laboratory and Subcontractor Laboratory Certification &amp; Requirements

## SUBCONTRACTOR REQUIREMENTS:

Bidder shall indicate below the item number for those procedures, which they intend to use a subcontractor lab.

Base Year

Period of performance begins at contract award until 30 September 2003. (Spring and Summer Sampling)

- ( ) 0001 VOCs/8260 MTBE, DIPE, ETBE, TAME, Ethanol
- ( ) 0002 Chemical Oxygen Demand (COD) by Method E410.1
- ( ) 0003 CLP Metals (Preparation & Analysis) by Method 6000/7000
- ( ) 0004 Mercury-Digestion & Analysis by Method 1631
- ( ) 0005 Total Organic Carbon (TOC) by Method 415.1
- ( ) 0006 Ammonia by Method 350.0
- ( ) 0007 Nitrate as Nitrogen by Method 352.1
- ( ) 0008 Kjeldahl Nitrogen by Method 351.1
- ( ) 0009 Dissolved Orthophosphate by Method 365.1
- ( ) 0010 Total Phosphorus by Method 365.1
- ( ) 0011 TDS/TSS/TS by Method 160.1, 160.2, & 160.3
- ( ) 0012 Total, Bicarbonate, Carbonate & Alkalinity
- ( ) 0013 Sulfate by Method 375.4
- ( ) 0014 Chloride by Method 325.3

Option Year One

Period of performance begins 1 October 2003 until 30 September 2004. (Spring and Summer Sampling)

- ( ) 1001 VOCs/8260 MTBE, DIPE, ETBE, TAME Ethanol
- ( ) 1002 Chemical Oxygen Demand (COD) by Method E410.1
- ( ) 1003 CLP Metals (Preparation & Analysis) by Method 6000/7000
- ( ) 1004 Mercury-Digestion & Analysis by Method 1631
- ( ) 1005 Total Organic Carbon (TOC) by Method 415.1
- ( ) 1006 Ammonia by Method 350.0
- ( ) 1007 Nitrate as Nitrogen by Method 352.1
- ( ) 1008 Kjeldahl Nitrogen by Method 351.1
- ( ) 1009 Dissolved Orthophosphate by Method 365.1
- ( ) 1010 Total Phosphorus by Method 365.1
- ( ) 1011 TDS/TSS/TS by Method 160.1, 160.2, & 160.3
- ( ) 1012 Total, Bicarbonate, Carbonate & Alkalinity
- ( ) 1013 Sulfate by Method 375.4
- ( ) 1014 Chloride by Method 325.3

Option Year Two

Period of performance begins 1 October 2004 until 30 September 2005. (Spring and Summer Sampling)

- ( ) 2001 VOCs/8260 MTBE, DIPE, ETBE, TAME Ethanol
- ( ) 2002 Chemical Oxygen Demand (COD) by Method E410.1
- ( ) 2003 CLP Metals (Preparation & Analysis) by Method 6000/7000
- ( ) 2004 Mercury-Digestion & Analysis by Method 1631
- ( ) 2005 Total Organic Carbon (TOC) by Method 415.1
- ( ) 2006 Ammonia by Method 350.0
- ( ) 2007 Nitrate as Nitrogen by Method 352.1
- ( ) 2008 Kjeldahl Nitrogen by Method 351.1
- ( ) 2009 Dissolved Orthophosphate by Method 365.1

- ( ) 2010 Total Phosphorus by Method 365.1
- ( ) 2011 TDS/TSS/TS by Method 160.1, 160.2, & 160.3
- ( ) 2012 Total, Bicarbonate, Carbonate & Alkalinity
- ( ) 2013 Sulfate by Method 375.4
- ( ) 2014 Chloride by Method 325.3

Indicate in the spaces below the name, point of contact, address, and phone number of the labs to be used. A maximum of two subcontract labs are allowed. The use of any labs other than those provided to the Government at the time of proposal submission must be approved prior to use by the Contracting Officer.

( ) Name of Lab (Prime)

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Point of Contact and Position

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Address

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Telephone Number

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( ) Name of Lab (Subcontractor)

---

Point of Contact and Position

---

Address

---

Telephone Number

---

~~~~~

( ) Name of Lab (Subcontractor)

---

Point of Contact and Position

---

Address

---

Telephone Number

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(End of Summary of Changes)